bio-protocol Preprint

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Redox potential measurements

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An abbreviated version of this protocol was published in eLIFE in Jun 2018

Antibiotic-induced changes in the microbiota disrupt redox dynamics in the gut

DOI: 10.7554/eLife.35987

Detailed protocol

Electrodes were calibrated daily in saturated quinhydrone buffer solutions (pH 4 and pH 7) with known redox potentials following manufacturer's instructions (see page 13 https://www.unisense.com/files/PDF/Manualer/Redox%20Sensor%20Manual.pdf).
A fresh fecal pellet was collected from an individual mouse and then placed on an agar plate.
The Ag/AgCl reference electrode was positioned to be in contact with the fecal pellet.
Using a micromanipulator, the redox electrode was lowered and inserted into the pellet. The redox electrode used was a RD-500 glass electrode (Unisense, Aarhus Denmark).
Data were collected continuously for 3 minutes then the electrode was retracted out of the fecal pellet. Data presented were the average of the 3 minutes of data.
The electrode was rinsed with DI water between samples.
At the end of data collection, sensors were cleaned with nitric acid (1:1 H2O) following manufacturer's instructions (see page 21 https://www.unisense.com/files/PDF/Manualer/Redox%20Sensor%20Manual.pdf).

How to cite:(Readers should cite both the Bio-protocol preprint and the original research article where this protocol was used)

1. Reese, A. (2021). Redox potential measurements. Bio-protocol Preprint. bio-protocol.org/prep915.
2. Reese, A. T., Cho, E. H., Klitzman, B., Nichols, S. P., Wisniewski, N. A., Villa, M. M., Durand, H. K., Jiang, S., Midani, F. S., Nimmagadda, S. N., O'Connell, T. M., Wright, J. P., Deshusses, M. A. and David, L. A.(2018). Antibiotic-induced changes in the microbiota disrupt redox dynamics in the gut. eLIFE. DOI: 10.7554/eLife.35987